Section 4. Route Assignment

4-4-1. ROUTE USE

Clear aircraft via routes consistent with the altitude stratum in which the operation is to be conducted by one or more of the following:

NOTE-
Except for certain NAVAID's/routes used by scheduled air carriers or authorized for specific uses in the control of IFR aircraft, airways, routes, and NAVAID's established for use at specified altitudes are shown on U.S. government charts or DOD FLIP charts.

REFERENCE-
FAAO 7110.65, NAVAID Terms, Para 2-5-2.
FAAO 7110.65, Exceptions, Para 4-1-2.
FAAO 7110.65, Minimum En Route Altitudes, Para 4-5-6.
FAAO 7110.65, Application, Para 5-6-1.

a. Designated airways and routes.

PHRASEOLOGY-
VIA:

VICTOR (color) (airway number)(the word Romeo when RNAV),

or

J (route number) (the word Romeo when RNAV),

or

SUBSTITUTE (airway or jet route) FROM (fix) to (fix),

or

IR (route number).

CROSS/JOIN VICTOR/(color) (airway number), (number of miles) MILES (direction) OF (fix).

b. Radials, courses, azimuths, or direct to or from NAVAID's.

PHRASEOLOGY-
DIRECT.

VIA;

(name of NAVAID) (specified) RADIAL/COURSE/ AZIMUTH,

or

(fix) AND (fix),

or

RADIALS OF (airway or route) AND (airway or route).

c. DME arcs of VORTAC, MLS, or TACAN aids.

d. Radials, courses, azimuths, and headings of departure or arrival routes.

e. DP's/STAR's/FMSP's.

f. Vectors.

g. Fixes defined in terms of degree-distance from NAVAID's for special military operations.

h. Courses, azimuths, bearings, quadrants, or radials within a radius of a NAVAID.

PHRASEOLOGY-
CLEARED TO FLY (general direction from NAVAID) OF (NAVAID name and type) BETWEEN (specified) COURSES TO/BEARINGS FROM/RADIALS (NAVAID name when a NDB) WITHIN (number of miles) MILE RADIUS,

or

CLEARED TO FLY (specified) QUADRANT OF (NAVAID name and type) WITHIN (number of miles) MILE RADIUS.

or

CLEARED TO FLY (general direction from MLS) OF (name or MLS) BETWEEN (specified) AZIMUTHS WITHIN/BETWEEN (number of miles) MILE RADIUS.

EXAMPLE-
1. *"Cleared to fly east of Allentown VORTAC between the zero four five and the one three five radials within four zero mile radius."*

2. *"Cleared to fly east of Crystal Lake radio beacon between the two two five and the three one five courses to Crystal Lake within three zero mile radius."*

3. *"Cleared to fly northeast quadrant of Philipsburg VORTAC within four zero mile radius."*
"Cleared to fly east of the Montgomery M-L-S runway two eight left between the two seven zero and the two four zero azimuth within a 5 mile radius."

i. Fixes/waypoints defined in terms of:

1. Published name

or

2. Degree-distance from NAVAID's

or

3. Latitude/longitude coordinates

or

4. Offset from published or established routes/airways at a specified distance and direction for random (impromptu) RNAV Routes.

PHRASEOLOGY-
DIRECT (fix/waypoint)

DIRECT TO THE (facility) (radial) (distance) FIX.

OFFSET(distance) RIGHT/LEFT OF (route).

EXAMPLE-
"Direct SUNOL."
"Direct to the Appleton three one zero radial two five mile fix."
"Offset eight miles right of Victor six."

REFERENCE-
FAAO 7110.65, Aircraft Equipment Suffix, Para 2-3-7.
FAAO 7110.65, NAVAID Fixes, Para 2-5-3.
FAAO 7110.65, Chapter 5, Section 5, Radar Separation, Application, Para 5-5-1.

4-4-2. ROUTE STRUCTURE TRANSITIONS

To effect transition within or between route structure, clear an aircraft by one or more of the following methods, based on VOR, VORTAC, TACAN, or MLS NAVAID's (unless use of other NAVAID's are essential to aircraft operation or ATC efficiency):

a. Vector aircraft to or from radials, courses, or azimuths of the airway or route assigned.

b. Assign a DP/STAR/FMSP.

c. Clear departing or arriving aircraft to climb or descend via radials, courses, or azimuths of the airway or jet route assigned.

d. Clear departing or arriving aircraft directly to or between the NAVAID's forming the airway or route assigned.

e. Clear aircraft to climb or descend via the airway or route on which flight will be conducted.

f. Clear aircraft to climb or descend on specified radials, courses, or azimuths of NAVAID's.

g. Provide radar monitor when transition to or from a designated or established RNAV route is made along random RNAV routes.

h. Clear RNAV aircraft transitioning to or between designated or established RNAV routes direct to a named waypoint on the new route.

4-4-3. DEGREE-DISTANCE ROUTE DEFINITION FOR MILITARY OPERATIONS

EN ROUTE

a. Do not accept a military flight plan whose route or route segments do not coincide with designated airways or jet routes or with a direct course between NAVAID's unless it is authorized in subpara b and meets the following degree-distance route definition and procedural requirements:

1. The route or route segments shall be defined in the flight plan by degree-distance fixes composed of:

(a) A location identifier;

(b) Azimuth in degrees magnetic; and

(c) Distance in miles from the NAVAID used.

EXAMPLE-
"MKE 030025."

2. The NAVAID's selected to define the degree-distance fixes shall be those authorized for use at the altitude being flown and at a distance within the published service volume area.

3. The distance between the fixes used to define the route shall not exceed:

(a) Below FL 180- 80 miles;

(b) FL 180 and above- 260 miles; and

(c) For celestial navigation routes, all altitudes- 260 miles.

4. Degree-distance fixes used to define a route shall be considered compulsory reporting points except that an aircraft may be authorized by ATC to omit reports when traffic conditions permit.

5. Military aircraft using degree-distance route definition procedures shall conduct operations in accordance with the following:

(a) Unless prior coordination has been effected with the appropriate air traffic control facility, flight plan the departure and the arrival phases to conform with the routine flow of traffic when operating within 75 miles of the departure and the arrival airport. Use defined routes or airways or direct courses between NAVAID's or as otherwise required to conform to the normal flow of traffic.

(b) Flight plans must be filed at least 2 hours before the estimated time of departure.

b. The following special military operations are authorized to define routes, or portions of routes, by degree-distance fixes:

1. Airborne radar navigation, radar bomb scoring (RBS), and airborne missile programming conducted by the USAF, USN, and RAF.

2. Celestial navigation conducted by the USAF, USN, and RAF.

3. Target aircraft operating in conjunction with air defense interceptors, and air defense interceptors while en route to and from assigned airspace.

4. Missions conducted above FL 450.

5. USN fighter and attack aircraft operating in positive control airspace.

6. USN/USMC aircraft, TACAN equipped, operating within the Honolulu FIR/Hawaiian airways area.

7. USAF/USN/USMC aircraft flight planned to operate on MTR's.

8. USAF Air Mobility Command (AMC) aircraft operating on approved station-keeping equipment (SKE) routes in accordance with the conditions and limitations listed in FAA Exemption No. 4371 to 14 CFR Section 91.177(a)(2) and 14 CFR Section 91.179(b)(1).

4-4-4. ALTERNATIVE ROUTES

When any part of an airway or route is unusable because of NAVAID status, clear aircraft other than /E, /F, or /G, via one of the following alternative routes:

a. A route depicted on current U.S. Government charts/publications. Use the word "substitute" immediately preceding the alternative route in issuing the clearance.

b. A route defined by specifying NAVAID radials, courses, or azimuths.

c. A route defined as direct to or between NAVAID's.

d. Vectors.

NOTE-
Inform area navigation aircraft that will proceed to the NAVAID location of the NAVAID outage.

4-4-5. CLASS G AIRSPACE

Include routes through Class G airspace only when requested by the pilot.

NOTE-
1. *Flight plans filed for random RNAV routes through Class G airspace are considered a request by the pilot.*

2. *Flight plans containing MTR segments in/through Class G airspace are considered a request by the pilot.*